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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/900,507 Confirmation No.: 4180
Applicant(s): Oleynick et al.
Filed: 7/6/2001
Art Unit: 2833
Examiner: Leon, Edwin A.
Title: Universal Serial Bus Electrical Connector
Attorney Docket No.: 003A.0005.U1(US)
Customer No.: 29,683

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Request For Reinstatement Of Appeal

Sir:

This is in response to the Office Action mailed 3/3/2004 in regard to the above-identified patent application. In accordance with 37 C.F.R. §1.193(b)(2)(ii) Applicants' Attorney hereby requests reinstatement of the appeal in this case. Enclosed is a Supplemental Appeal Brief.

Respectfully submitted,

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Supplemental Appeal Brief

Sir:

This is a supplemental appeal brief in regard to the rejection of claims in the above-identified patent application. This brief is being filed in triplicate as required by 37 C.F.R. §1.192. The fee under 37 C.F.R. §1.17(c) was previously paid with the Appeal Brief filed 11/12/2003. Please charge deposit account 50-1924 for any fee deficiency. The Appeal Brief filed 11/12/2003 is hereby incorporated by reference in its entirety.

I. Real Party In Interest

The real party in interest is FCI Americas Technology, Inc.

II. Related Appeals and Interferences

There are no directly related appeals or interferences regarding this application.

III. Status Of Claims

Claims 1-12 and 14-34 are pending in this application. Claims 29-33 have been allowed. Claims 1-9, 11-12, 14-16, 18-22, 26-28 and 34 have been rejected by the Examiner. Claims 10, 17 and 23-25 have been objected to by the examiner. The rejection of Claims 1-9, 11-12, 14-16, 18-22, 26-28 and 34 is appealed.

IV. Status Of Amendments

Since the rejection of 3/3/2004 no amendments have been filed.

V. Summary of the Invention

An electrical connector (10) comprising electrical contacts (14) including signal contacts (58) and power contacts (60) (page 9, lines 20-21); and a housing (12) having the electrical contacts connected to the housing. The housing has at least two vertically arranged electrical plug receiving areas (46, 48) (page 7, lines 22-24) (see Figs. 2 and 4). The signal contacts (58) extend into the receiving areas (46, 48) in a universal serial bus (USB) electrical conductor location configuration (page 12, lines 4-11). The power contacts (60) extend into the receiving areas on respective sides of the receiving areas that are opposite the signal contacts in each

receiving area (page 11, lines 6-10). In each receiving area the signal contacts (58) are located along only a first one of the sides and the power contacts (60) are located along only a second one of the sides opposite the first side (see Fig. 2).

A universal serial bus (USB) electrical connector plug (80) (see Figs. 5A and 5B) can be inserted in the connector. The plug (80) comprises a signal contact supporting deck (88); electrical signal conductors (92) directly stationarily attached to a first exterior side of the supporting deck; and electrical power conductors (96) directly stationarily attached to an opposite second exterior side of the supporting deck (page 13, lines 5-13). The supporting deck is sized and shaped to be inserted into a supporting deck receiving aperture (46, 48) of the USB electrical connector receptacle. The electrical signal conductors are aligned in a USB contact array configuration. The conductors on the supporting deck comprise the first side having only the signal conductors and the second side having only the power conductors (page 15, line 28 - page 16, line 6).

VI. Issue

1. Are claims 1-7, 9, 11-12, 14-16 and 18-22 unpatentable under 35 U.S.C. §102(e) as being anticipated by Wu (US 6,166,892)?
2. Is claim 8 unpatentable under 35 U.S.C. §103(a) as being obvious in view of Wu (US 6,166,892)?

3. Are claims 26-28 and 34 unpatentable under 35 U.S.C. §103(a) as being obvious in view of Wu (US 6,166,892) in view of Yang (US 6,238,244)?

VII. Grouping of Claims

The claims do not stand or fall together. In accordance with 37 C.F.R. §1.192(c)(7) the reasons why Appellants believe the claims to be separately patentable are explained in the argument section below.

VIII. Argument

Claim 1 claims an electrical connector with at least two vertically arranged plug receiving areas. In each receiving area the signal contacts are located along only a first one of the sides of the receiving area and the power contacts are located along only a second one of the sides of the receiving area opposite the first side. In Wu the power contacts 54, 55 (having straight tails) and the signal contacts 4 (having bent tails) are located in a same row in each receiving area 13. There is no disclosure or suggestion of one side of a receiving area 13 having only signal contacts and the opposite side of the same receiving area 13 having only power contacts.

It appears that the examiner is interpreting the term "side" to include right side and left side in Wu. In Wu, the power contacts are on the left side and the signal contacts are on the right side. However, the signal contacts 4 are not located on only the right side. The signal contacts extend from the right side through the center towards the left side.

At least one signal contact in each row is located past the center of the receiving area; on the left side. Claim 1, on the other hand, calls for **each** receiving area having the signal contacts located along **only** a first one of the sides of the receiving area and the power contacts located along **only** a second one of the sides of the receiving area opposite the first side. This is not disclosed or suggested in the cited art.

The examiner has stated that, in Wu, :

"...the power contacts (54,55) extend into the receiving areas (13) on respective sides of the receiving areas (13) that are opposite the signal contacts (4) in each receiving area (13), and wherein in each receiving area (13) the signal contacts (4) are located along only a first one of the sides and the power contacts (54, 55) are located along only a second one of the sides opposite the first side. See Fig. 1A-3."

The examiner is incorrect. There is no disclosure in Wu that signal contacts (4) are located along **only** a first one of the sides. The drawings of Wu clearly show the opposite (regarding left versus right side). Thus, Wu does not "anticipate" the features of claim 1. Nor is there a suggestion of the features of claim 1 in Wu (alone or in combination with any of the other art of record) to render claim 1 obvious. There is no disclosure or suggestion of two vertically arranged plug receiving areas; wherein each receiving area has the signal contacts located along only a first one of the sides of the receiving area and the power contacts are located along only a second one of the sides of

the receiving area opposite the first side. The features of claim 1 are not disclosed or suggested in the art of record. Therefore, claim 1 is patentable and should be allowed.

Claims 2 and 9 stand or fall with claim 1.

Claim 3 claims that the spring contact sections of the signal contacts extend into two of the plug receiving areas in opposite directions. This is not disclosed in Wu. There is no disclosure in Wu that the signal contacts 4 extend into the two plug receiving areas 13 in opposite directions. Wu does not anticipate claim 3. Nor are the features of claim 3 obvious in view of Wu.

Claim 4 claims that the **power** contacts comprise spring contact sections extending into the plug receiving areas, tails extending from a bottom side of the housing, and bent sections therebetween. In Wu the power contacts 54, 55 have tails which extend straight out the back of the connector; not having bent sections and extending from a bottom side of the housing. Wu does not anticipate claim 4.

Claim 5 claims that the spring contact sections of the power contacts extend into two of the receiving areas in respective **opposite directions**. There is no disclosure or suggestion in Wu that the contacts 4, 55, 54 extend into two of the receiving areas 13 in respective opposite directions. Wu does not anticipate the features of claim 5. Nor are the features of claim 5 obvious in view of Wu.

Claim 6 claims that the housing comprises a section between two of the plug receiving areas, and wherein the power contacts extend from the section into the two plug receiving

areas. Wu does not anticipate claim 6. There is no disclosure or suggestion in Wu that the power contacts 54, 55 extend from a section between the two receiving areas 13 into the receiving areas 13.

Claim 7 claims that the electrical contacts, extending into a first one of the plug receiving areas, are arranged as a substantially mirror image to the electrical contacts extending into a second one of the plug receiving areas. Wu does not disclose this feature. In Wu, the arrangement is the same; not a mirror image. Wu does not anticipate the features of claim 7. Nor are the features of claim 7 suggested by Wu; alone or in combination with any of the other art of record.

Claim 8 claims that each plug receiving area comprises four of the signal contacts extending thereinto and two of the power contacts extending thereinto opposite the four signal contacts. Wu does not suggest these features. The examiner stated that the features of claim 8 would be a mere duplication of parts and well known in the art. This is incorrect. The number of contacts **and** the arrangement of the contacts is not merely a duplication of parts and is not well known in the art. In accordance with MPEP §2144.03 the examiner is requested to cite a reference in support of his position regarding "well known in the art". Claim 8 relates to position of the power contacts versus the signal contacts, so it is clearly not merely duplication of parts, but includes **arrangement of those parts**. Wu does not suggest the features of claim 8.

Claim 11 claims a USB connector with a plurality of USB plug receiving areas. The housing has a housing section between

two of the receiving areas. The power contacts extend into the receiving areas only from the housing section between the receiving areas. The signal contacts extend into the receiving areas only along sides of the receiving areas opposite the housing section. Wu has an insulating housing 1 which appears to show a section between the two receiving areas 13. However, there is no disclosure or suggestion that the power contacts 54, 55 extend into the receiving areas 13 only from that section. Claim 11, on the other hand, recites that the power contacts extend into the two receiving areas **only** from the housing section and the signal contacts extend into the receiving areas only along sides of the receiving areas opposite the housing section. Wu certainly does not "anticipate" claim 11. The features of claim 11 are not disclosed or suggested in the art of record. Therefore, claim 11 is patentable and should be allowed.

Claims 12 and 15 stand or fall with claim 11.

Claim 14 claims that the signal and power contacts extend into a first one of the receiving areas and are arranged as a substantially mirror image of the signal and power contacts extending into a second one of the receiving areas. This feature, in combination with the features of the power contacts extending into the receiving areas only from the housing section between the receiving areas and the signal contacts extending into the receiving areas only along sides of the receiving areas opposite the housing section, is not disclosed or suggested in the art of record. Wu does not "anticipate" claim 14. Nor are the features of claim 14 suggested by Wu; alone or in combination with any of the other

art of record. Therefore, claim 14 is patentable and should be allowed.

Claim 16 claims that the electrical signal contacts and the electrical power contacts in the two receiving areas are arranged as substantially mirror images of each other. This feature, in combination with the features of the power contacts extending into the receiving areas only from the housing section between the receiving areas and the signal contacts extending into the receiving areas only along sides of the receiving areas opposite the housing section, is not disclosed or suggested in the art of record. Wu does not "anticipate" the features of claim 16. Nor are the features of claim 16 suggested by Wu; alone or in combination with any of the other art of record. Therefore, claim 16 is patentable and should be allowed.

Claim 18 claims an electrical connector with two plug receiving areas. Signal contacts in the first receiving area are located along only a first side of the first receiving area and the power contacts in the first receiving area are located along only the second side of the first receiving area. Wu does not "anticipate" the features of claim 18. Similar to that noted above with respect to claim 1, there is no disclosure in Wu that signal contacts (4) are located along **only** a first one of the sides. The drawings of Wu clearly show the opposite (regarding left versus right side). In Wu the power contacts 54, 55 (having straight tails) and the signal contacts 4 (having bent tails) are located in a same row in each receiving area 13. There is no disclosure or suggestion of one side of a receiving area 13 having only signal contacts and the opposite side of the receiving area 13

having only power contacts. It appears that the examiner is interpreting the term "side" to include right side and left side in Wu. However, the signal contacts 54, 55 are not located on only the right side. In Wu the signal contacts extend from the right side and the center to the left side. One of the signal contacts 4 in each receiving area 13 is clearly shown as being located past the center of the receiving area 13; left of center. In other words, on the left side. Claim 18, on the other hand, recites that the signal contacts in the first receiving area are located along only the first side and the power contacts in the first receiving area are located along only the second side. Wu clearly does not "anticipate" claim 18. The features of claim 18 are not disclosed or suggested in the art of record. Therefore, claim 18 is patentable and should be allowed.

Claims 19-20 stand or fall with claim 18.

Claim 21 claims that the power contacts extend from the section (of the housing located between and separating the two plug receiving areas from each other) in opposite directions into the two receiving areas. Wu does not anticipate the features of claim 21. "Sections 67, 68" noted by the examiner are power terminals for the power regulating device 6; not part of the housing 1. There is no disclosure or suggestion in Wu that the power contacts 54, 55 extend from a housing section located between and separating the two plug receiving areas 13 from each other in opposite directions into the two receiving areas 13.

Claim 22 claims that the signal contacts extend into the first and second receiving areas in respective opposite inward

directions. Wu does not anticipate the features of claim 22. There is no disclosure or suggestion in Wu that the signal contacts 4 extend into the two receiving areas 13 in respective opposite inward directions.

Claim 26 claims a USB receptacle with a plug receiving area which is sized and shaped to receive a plurality of USB plugs with signal contact supporting decks of two of the plugs being located vertically aligned relative to each other and power contact supporting sections of the two plugs being at least partially laterally adjacent each other. This generally corresponds to the embodiment of Fig. 6 in the application (Fig. 7 shows one of the plugs and Fig. 8 shows the other plug). The examiner has not commented on the features of claim 26 other than to state that Wu discloses the claimed invention except the plurality of USB plugs having support decks being located vertically aligned relative to each other. Even if Wu and Yang are combined, there still is no suggestion of a plug receiving area adapted to receive a plurality of USB plugs with power contact supporting sections of a first plug being at least partially laterally adjacent a power contact supporting section of a second plug; the plug receiving area being adapted to receive the two plugs vertically aligned relative to each other. Claim 26 is not suggested in the art of record. Therefore, claim 26 is patentable and should be allowed.

Claims 27 and 28 stand or fall with claim 26.

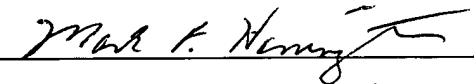
Claim 34 claims a USB plug wherein the conductors on the supporting deck comprise the first side having only signal conductors and the second side having only power conductors.

Please note the plug shown in Figs. 5A-5C. Regarding the rejection of claim 34, the examiner has merely stated that Wu discloses the claimed invention except the plurality of USB plugs having support decks being located vertically aligned relative to each other. Nowhere in Wu or Yang is a plug actually shown. Nowhere in Wu or Yang, alone or in combination, is there a disclosure or suggestion of a USB plug wherein the conductors on the supporting deck comprise the first side having only the signal conductors and the second side having only the power conductors. Wu discloses a socket with power contacts 54, 55 on a left side and signal contacts on a right side, but the signal contacts are also on the left side (at least one signal contact 4 in each receiving area 13). The features of claim 34 are patentable and the claim should be allowed.

X. Conclusion

In view of the arguments presented above, it is respectfully requested that the Examiner's rejections of Claims 1-9, 11-12, 14-16, 18-22, 26-28 and 34 be reversed.

Respectfully submitted,


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3/18/04
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Claims

1. An electrical connector comprising:

electrical contacts comprising signal contacts and power contacts; and

a housing having the electrical contacts connected thereto, the housing comprising at least two vertically arranged electrical plug receiving areas, wherein the signal contacts extend into the receiving areas in a universal serial bus (USB) electrical conductor location configuration, wherein the power contacts extend into the receiving areas on respective sides of the receiving areas that are opposite the signal contacts in each receiving area, and wherein in each receiving area the signal contacts are located along only a first one of the sides and the power contacts are located along only a second one of the sides opposite the first side.

2. An electrical connector as in claim 1 wherein the signal contacts comprise spring contact sections extending into the plug receiving areas, tails extending from a bottom side of the housing, and bent sections therebetween.

3. An electrical connector as in claim 2 wherein the spring contact sections of the signal contacts extend into two of the plug receiving areas in opposite directions.

4. An electrical connector as in claim 1 wherein the power contacts comprise spring contact sections extending into the plug receiving areas, tails extending from a bottom side of the housing, and bent sections therebetween.

5. An electrical connector as in claim 4 wherein the spring contact sections of the power contacts extend into two of the receiving areas in respective opposite directions.

6. An electrical connector as in claim 1 wherein the housing comprises a section between two of the plug receiving areas, and wherein the power contacts extend from the section into the two plug receiving areas.

7. An electrical connector as in claim 1 wherein the electrical contacts extending into a first one of the plug receiving areas are arranged as a substantially mirror image to the electrical contacts extending into a second one of the plug receiving areas.

8. An electrical connector as in claim 1 wherein each plug receiving area comprises four of the signal contacts extending therinto and two of the power contacts extending therinto opposite the four signal contacts.

9. An electrical connector as in claim 1 further comprising an electrically conductive shell connected to the housing, the shell comprising contacts extending into the plug receiving areas.

10. An electrical connector as in claim 9 wherein the housing comprises projections extending into the receiving areas in a forward direction, portions of the signal contacts extending through cavities along the projections, and ends of the signal contacts being preloaded against sections of the projections.

11. A universal serial bus (USB) electrical connector comprising:

a housing forming a plurality of USB plug receiving areas;

electrical signal contacts connected to the housing, and extending into the receiving areas, arranged for operably electrically connecting to the USB plugs inserted into the USB plug receiving areas; and

electrical power contacts connected to the housing and extending into the receiving areas on respective sides of the receiving areas opposite the signal contacts in each of the receiving areas, wherein the housing has a section between two of the receiving areas, wherein the power contacts extend from the section in opposite directions into the two receiving areas, and wherein the power contacts extend into the two receiving areas only from the housing section and the signal contacts extend into the receiving areas only along sides of the receiving areas opposite the housing section.

12. A universal serial bus electrical connector as in claim 11 wherein the two receiving areas are vertically orientated relative to each other.

13. (Canceled)

14. A universal serial bus electrical connector as in claim 11 wherein the signal and power contacts extending into a first one of the receiving areas are arranged as a substantially mirror image of the signal and power contacts extending into a second one of the receiving areas.

15. A universal serial bus electrical connector as in claim 11 wherein the receiving areas extend into a front side of the housing, and wherein ends of the contacts extend from a bottom side of the housing.

16. A universal serial bus electrical connector as in claim 11 wherein the plug receiving areas are vertically aligned relative to each other, and wherein the electrical signal contacts and the electrical power contacts in the two receiving areas are arranged as substantially mirror images of each other.

17. A universal serial bus electrical connector as in claim 16 further comprising an electrically conductive shell connected to the housing, the shell comprising contact arms which extend into the two receiving areas in opposite directions.

18. An electrical connector comprising:

a housing having two plug receiving areas vertically stacked relative to each other; and

electrical contacts connected to the housing and extending into the two plug receiving areas, the contacts comprising signal contacts and power contacts,

wherein the power contacts extend into the two receiving areas and the signal contacts extend into the two receiving areas, wherein the signal and power contacts in a first one of the receiving areas are arranged in an array with the signal contacts on a first side of the first receiving area being located opposite the power contacts on an opposite second side in the first

receiving area, the array being substantially a mirror image of the signal and power contacts in a second one of the receiving areas, and wherein signal contacts in the first receiving area are located along only the first side and the power contacts in the first receiving area are located along only the second side.

19. An electrical connector as in claim 18 wherein the housing comprises a section located between and separating the two plug receiving areas from each other.

20. An electrical connector as in claim 19 wherein the two plug receiving areas are vertically aligned relative to each other.

21. An electrical connector as in claim 19 wherein the power contacts extend from the section in opposite directions into the two receiving areas.

22. An electrical connector as in claim 21 wherein the signal contacts extend into the first and second receiving areas in respective opposite inward directions.

23. An electrical connector as in claim 18 further comprising an electrically conductive shell connected to the housing, the shell comprising contact arms extending into the two receiving areas from four sides of the connector.

24. An electrical connector as in claim 18 wherein the housing comprises two projections extending towards a front end of the housing above and below a center projection of the housing, and wherein the signal contacts extend through the two

projections and project out of the two projections in opposite directions towards the center projection.

25. An electrical connector as in claim 24 wherein the power contacts extend through and out of the center projection in opposite directions into the two plug receiving areas.

26. A universal serial bus (USB) electrical connector receptacle for receiving a plurality of USB electrical connector plugs, the receptacle comprising:

a housing having at least one plug receiving area; and

electrical contacts connected to the housing, the contacts comprising signal contacts and power contacts,

wherein the at least one plug receiving area is sized and shaped to receive the plurality of USB plugs with signal contact supporting decks of two of the plugs being located vertically aligned relative to each other and power contact supporting sections of the two plugs being at least partially laterally adjacent each other.

27. A universal serial bus electrical connector receptacle as in claim 26 wherein the housing comprises two of the plug receiving areas, the two plug receiving areas being vertically aligned with each other.

28. A universal serial bus electrical connector receptacle as in claim 27 wherein the signal contacts extend into the two receiving areas in a same direction.

29. An electrical connector comprising:

a housing having at least one plug receiving area; and
electrical contacts connected to the housing, the
contacts comprising signal contacts and power contacts,
wherein the at least one plug receiving area comprises:

a first receiving area section sized and shaped to
receive a first electrical plug having a signal
contact supporting deck and a power contact section
vertically offset from the signal contact supporting
deck; and

a second receiving area section sized and shaped to
receive a second electrical plug having a signal
contact supporting deck and a power contact section
vertically offset from the signal contact supporting
deck,

and wherein at least one of the first and second
receiving area sections is sized and shaped to
alternatively receive a third electrical plug having a
signal contact supporting deck, but not having a power
contact section.

30. An electrical connector as in claim 29 wherein the at
least one plug receiving area is sized and shaped to locate
the power contact sections of the first and second electrical
plugs laterally adjacent to each other.

31. An electrical connector as in claim 30 wherein the first
and second receiving area sections are vertically aligned with
each other.

32. An electrical connector as in claim 29 wherein the signal contacts and the power contacts extend into the first receiving area section in opposite directions.

33. An electrical connector as in claim 29 wherein the first and second receiving area sections each comprise a deck receiving area for receiving contact supporting decks of the first and second electrical plugs, and a common power contact section receiving area is located between the deck receiving areas.

34. A universal serial bus (USB) electrical connector plug comprising:

a signal contact supporting deck;

electrical signal conductors directly stationarily attached to a first exterior side of the supporting deck; and

electrical power conductors directly stationarily attached to an opposite second exterior side of the supporting deck, wherein the supporting deck is sized and shaped to be inserted into a supporting deck receiving aperture of a USB electrical connector receptacle, wherein the electrical signal conductors are aligned in a USB contact array configuration, and wherein the conductors on the supporting deck comprise the first side having only the signal conductors and the second side having only the power conductors.